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(71) Applicant(s)

Penmoy Holdings Limited

(Incorporated in Ireland)

2 Herbert Street, DUBLIN 2, Ireland

(72) Inventor(s)

Ronan Gerard McNamee

Patrick Joseph Loughrey

(74) Agent and/or Address for Service

F J Cleveland & Co

**40-43 Chancery Lane, LONDON, WC2A 1JQ,
United Kingdom**

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(56) Documents Cited

GB 2177585 A GB 1443892 A GB 0977266 A
GB 0784948 A EP 0477832 A1 WO 94/10853 A1
US 5128161 A US 4389420 A

(58) Field of Search

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(54) **Method of marking baked products**

(57) The crust of baked bread, is marked with trade mark, logo or other informational or design material by the application to the dough surface prior to baking of an edible substance which induces differential crust colouration on baking. The edible substance is sprayed eg ink jet spraying or painted on the surface of the dough and comprises an aqueous or alcohol solution or suspension of one or more of sugar, carbohydrate, proteinaceous material or milk powder. By appropriate selection of the edible substance, the markings may be either lighter or darker in colour after baking than the unmarked portion of the crust.

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A METHOD OF MARKING BAKED PRODUCTS

The present invention refers to baked products and in particular to a method for applying identifying information
5 to a baked product.

Baked products such as bread and the like have in recent decades been sold prepacked in wrappers on which typically is printed information about the manufacturer and the type
10 of product in addition to trade mark material.
Nevertheless, many local bakeries continue in their tradition of producing freshly baked products which are bagged after selection by a customer.

15 In more recent years, the supply of frozen part-baked bread to the in-store bakery business has been growing rapidly. Cartons of these frozen breads are delivered to retailers who finish the baking in small ovens for 8-10 minutes to change the colour of the crust from a pale white to a
20 golden brown.

Bread delivered in this form to be further baked in ovens cannot obviously be pre-packed in individual packages marked with the manufacturer's name or trade mark or the
25 ingredients or type of bread or weight or other indicia.

This represents a problem for suppliers as other manufacturers products can be confused for the supplier's products and there is currently no way of incorporating a
30 supplier or manufacturer's name associated with the bread. Likewise the identification of particular types of bread - such as rye bread, multigrain bread, organic bread etc is made difficult at the point of sale.

35 Moreover, even with bread which is sold in pre-packaged

form, such as small rolls, there is no identification of its typ or manufacturer once the packaging has been removed.

5 Baked products, for example breads, which have a message, such as a name or a trade mark, incorporated into the crust by imprinting the crust to pick out the message in low or high relief are known. This requires direct deforming impact of a printing tool or a baking tray on the surface
10 of the product and is relatively crude in that the characters or designs imprinted on the crust must be sufficiently large so as to retain their integrity during the baking process. As the product rises and increases its volume during baking, the definition of the imprinted
15 message can be lost if the characters are small and/or the imprinting is insufficiently deep. The use of baking trays having indentations also presents hygiene problems due to the need for thorough cleaning of the trays. Difficulties in releasing the bread from the tray may also be
20 encountered.

An object of the present invention is to provide a method of marking the crust of a baked product which method avoids distorting the surface of the product and is hygienic and
25 convenient.

The present invention provides a method of marking the surface of a bakable edible product, characterised by applying an edible marking substance to a portion of the
30 surface of the product prior to baking, then baking the product for a time sufficient to develop differential surface colouration at the position of and as a consequence of the application of the marking substance.

35 The marking substance may comprise one or more of sugar,

carbohydrate or proteinaceous material in an aqueous or organic medium and preferably comprises one or more of starch, glucose, protein, milk powder or skimmed milk powder in an aqueous or organic medium.

5

In a preferred method, the marking substance comprises an aqueous solution including between 0.5 to 1 part by weight of glucose to one part by weight of water.

10 Advantageously, the substance is applied to the product by spraying.

Where an organic medium is used, this is preferably an edible alcohol, most preferably ethanol.

15

The invention also provides a baked or part-baked edible product, characterised in that the surface of the product includes markings defined by different surface colouration compared to non-marked surfaces, the different colouration
20 resulting from the application to the marked surfaces of an edible marking substance.

The crust of a baked product such as bread can vary in colour according to the recipe or baking process used. The
25 method of the invention enables the artificial induction of differential crust colouration in the baked product. By applying a suitable marking substance to the surface of an unbaked or part baked product in discrete areas of the crust during the production process, the marking retains
30 its definition during baking, even after a freeze - thaw cycle, resulting in a difference in the crust colour at the marked area compared to the unmarked area of the crust when the product is baked.

35 The marking substance may be applied to the crust by direct

application (for example with a brush) or by spraying (for example with a jet printer of the type used in ink printing), with or without the use of a stencil. It can be applied to the fully proved dough before the dough is part-baked, or where appropriate, after part baking and before the product is frozen. The marking mixture may also be applied to a dough which is subsequently fully baked. In any case, a logo or distinguishing mark and/or lettering appears in the crust after final baking. The mixture incorporates edible ingredients which do not alter the composition of the bread. Preferably it is applied by a jet printer head which is not in contact with the bread surface.

The marking mixture may comprise any edible material which can be prepared in a substantially liquid form to enable it to be applied to the crust. For jet printing, the mixture should have a viscosity which is sufficiently low to enable it to be sprayed from a reservoir without blocking the spray heads of the printer. Typically, the mixture will comprise a sugar, starch or protein, or a mixture thereof, carried in an aqueous or organic medium, the latter preferably being alcohol. Suitable choice of material permits the colour and colour intensity of the marking to be selected as desired. For example, it has been found that starch based mixtures tend to produce markings which are lighter in colour than the main part of the crust, whereas glucose mixes tend to produce markings which are darker than the main crust.

The use of jet printing enables markings with good definition to be applied to the crust, even for small markings down to at least 1.7 mm in height. Definition can also be adjusted by appropriate choice of marking material. For example, it has been found that an aqueous mixture of

skim milk powder gives good print definition.

More than one message, logo or the like may be sprayed onto a crust and for this purpose any required number of jet
5 sprayers can be provided. While the spraying is advantageously automated, it will be appreciated that the spraying may also be achieved by a hand-held spray. It will also be appreciated that the mixture may be applied by direct application, for example by brush.

10

Exemplary mixtures for use in the method of the invention are as follows, the proportions given referring to weight ratios of the components:

15	100 water	:	50 glucose 95 dextrose equivalent
	100 water	:	75 glucose 95 dextrose equivalent
	100 water	:	100 glucose 95 dextrose equivalent

In the preparation of fully baked bread, the marking
20 mixture is conveniently applied to the crust after the loaf forming and proving steps and prior to the baking step. For part-baked bread, the mixture can be applied either before or after the part-baking step which itself precedes freezing.

25

The surfaces may of course be marked in reverse, that is by spraying or otherwise coating all of the surface of the baked or part-baked product with the marking mixture, except the portion which is to carry the indicia, similarly
30 giving rise to differential crust colouration. In such case, a stencil may be used to mask the portions not to receive the marking mixture.

It will be appreciated that the invention is not limited to
35 the specific details described herein and that various

modifications and alterations are possible within the scope of the invention as defined in the appended claims.

CLAIMS

1. A method of marking the surface of a bakable edible product, characterised by applying an edible marking substance to a portion of the surface of the product prior to baking, then baking the product for a time sufficient to develop differential surface colouration at the position of and as a consequence of the application of the marking substance.
2. A method according to claim 1, in which the marking substance comprises one or more of sugar, carbohydrate, or proteinaceous material in an aqueous or organic medium.
3. A method according to claim 1, in which the marking substance comprises one or more of starch, glucose, protein, milk powder or skimmed milk powder in an aqueous or organic medium.
4. A method according to claim 3, in which the marking substance comprises an aqueous solution including between 0.5 to 1 part by weight of glucose to one part by weight of water.
5. A method according to claim 2 or 3, in which the organic medium comprises ethanol.
6. A method according any preceding claim, in which the marking substance is applied to the surface by spraying.
7. A baked or part baked edible product, characterised in that the surface of the product includes markings defined by different surface colouration compared to non-marked surfaces, the different colouration resulting from the

application to the marked surfaces of an edible marking substance.

8. A product according to claim 7, in which the edible marking substance comprises one or more of sugar, carbohydrate or proteinaceous material in an aqueous or organic medium.

9. A product according to claim 7, in which the edible marking substance comprises one or more of starch, glucose, protein, milk powder, or skimmed milk powder in an aqueous or organic medium.

10. A method of marking the surface of a baked or part-baked edible product according to claim 1, substantially as herein described.

11. A baked or part-baked edible product whenever prepared by a method according to any one of claims 1 to 6 or 10.

Patents Act 1977
Examiner's report to the Comptroller under Section 17
(The Search report)

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Relevant Technical Fields

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(ii) Int Cl (Ed.6) A21D 13/00; A23G 3/20; B05C 3/00, /02 B44C 1/00

Databases (see below)

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii) ONLINE: WPI

Search Examiner
R D CAVILL

Date of completion of Search
31 OCTOBER 1995

Documents considered relevant following a search in respect of Claims :-
1 to 6, 10 & 11

Categories of documents

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| <p>X: Document indicating lack of novelty or of inventive step.</p> <p>Y: Document indicating lack of inventive step if combined with one or more other documents of the same category.</p> <p>A: Document indicating technological background and/or state of the art.</p> | <p>P: Document published on or after the declared priority date but before the filing date of the present application.</p> <p>E: Patent document published on or after, but with priority date earlier than, the filing date of the present application.</p> <p>&: Member of the same patent family; corresponding document.</p> |
|--|---|

Category	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2177585 A (VINCENT) see Figure 2	1, 2, 6, 11
X	GB 1443892 (BOEHRINGER) see whole document	1-5, 11
X	GB 977266 (AUSTRALIAN BAKELS) see whole document	1, 2, 6, 11
X	GB 784948 (CROFT) see whole document	1, 2, 6, 11
X	EP 477832 A1 (NESTLE) see whole document particularly page 2 line 44 et seq	1-4, 11
X	WO 94/10853 A1 (DOPPLER)	1, 2, 3, 11
X	US 5128161 (SMITH) see whole document	1-6, 11
X	US 4389420 (YOUG) see table at column 6	1-6, 11

Databases:The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).